Leveraging GEOINT for Long-Term Humanitarian Assistance

By Kathi Ghannam, Contractor, Office of Corporate Communications

The National Geospatial-Intelligence Agency (NGA) played a pivotal role in providing disaster relief in response to the 7.0 magnitude earthquake that rocked Haiti Jan. 12, 2010.

The damage in the Port-au-Prince area was nearly unfathomable. The earthquake destroyed 75 percent of schools; many businesses and government offices, as well as hospitals and the country's medical infrastructure, ceased to exist. The postal service collapsed. Nearly 1.5 million people were displaced from their homes and as many as 300,000 died.

Within hours of notification of the disaster NGA stood up a crisis action team (CAT) to consolidate geospatial intelligence (GEOINT) efforts. The U.S. government leveraged resources across the Intelligence Community, the Department of Defense and other elements of the federal government, industry and academia to meet humanitarian assistance and disaster relief requirements. NGA personnel deployed to provide GEOINT support.

"The whole NGA team—to include key components from the East and West and members of NGA Support Teams (NSTs)—came together and used all of the tools and GEOINT capabilities that could be brought to bear," said Terri Carter, Haiti CAT focus cell lead. "From doing environmental and critical infrastructure and damage assessments, to providing imagery of ports to determine trafficability and navigability of Haiti's waterways, NGA provided situational awareness to U.S. Southern Command (USSOUTHCOM) and other decision makers so that they could emplace equipment and personnel to deliver food and medical aid."

Carter said NGA employed a holistic approach, leveraging the capabilities of the U.S. Transportation Command, the Defense Intelligence Agency and domestic and foreign partners in support of what became known as Operation Unified Response.

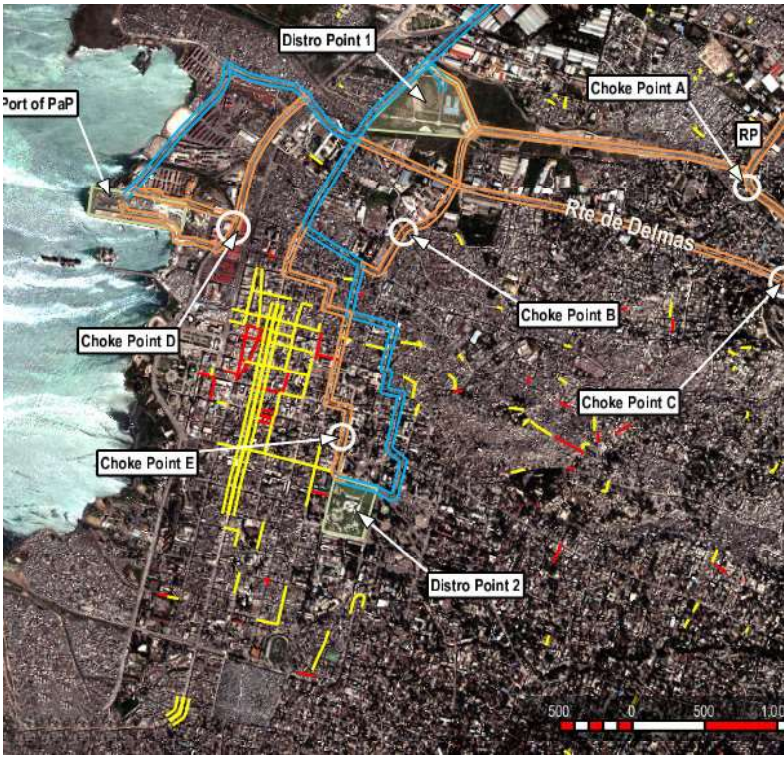
As a result, NGA was able to quickly assess the location and extent of the destruction and map medical facilities to support health-related activities, track the build-up and status of internally displaced persons (IDP) camps and follow possible mass migrations from major ports and across the Dominican Republic border.

Today, Haiti continues to pose some unique intelligence challenges.

"Due to the severity of the devastation, what began as a normal NGA rapid response in support of initial humanitarian assistance has turned into a long-term, multi-agency, multi-faceted project," said Carter. Almost two years later, NGA continues to help USSOUTHCOM leverage intelligence, surveillance and reconnaissance and commercial imagery capabilities to help in rebuilding efforts, as well as non-traditional sources of information, to inform and enrich analysis.

Though the United States and other countries have made massive contributions toward relief efforts, access to basic medical care, food and potable water have become long-term problems in what was already the poorest country in the Western Hemisphere. These were among the factors that contributed to a cholera epidemic, which started in Sept. 2010 and persists today, though at a more controllable rate. The disease

U.S. Southern Command used GEOINT analysis to determine the status of road networks within the city of Port-au-Prince. The graphic assisted first responders and planners in providing immediate relief operations after the earthquake.



470th Military Intelligence Brigade image

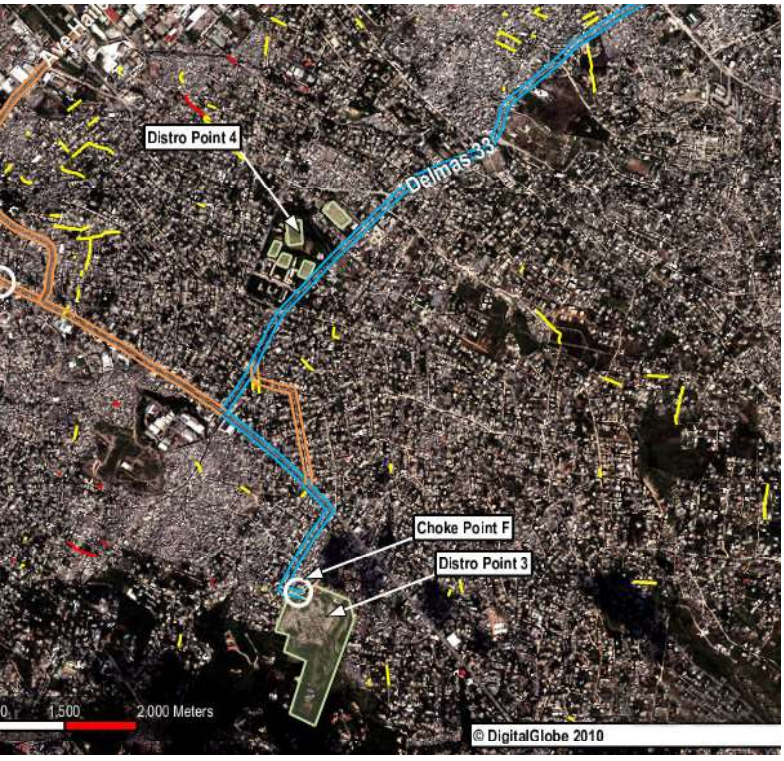
had affected a total of 452,189 people by October 2011, with 24,932 hospitalized and 6,334 deaths, according to Brian Bertazon, GEOINT Chief, Joint Intelligence Operations Center-South, USSOUTHCOM NST.

Bertazon said analysts used GEOINT to correlate suspected IDP camps and hospitals with large numbers of patients afflicted with cholera to help direct medical supplies.

The GEOINT NGA collects helps inform groups like the U.S. Agency for International Development and the European Union—the major financing sources for reconstruction—about the progress of recovery efforts. "More than 600,000 people are still not in their homes, and at least 500 IDP camps are still in operation." said Bertazon. But progress is apparent; analysts have seen an increase in power restoration, construction of hardened facilities and reduced numbers of camps and occupancy.

The main focus area for NGA and the IC—after health and shelter issues—is security. Haiti lacks security forces, so GEOINT capabilities are tracking activities such as crime patterns, in addition to accessibility to life-sustaining services and supplies, to predict and track possible mass migration.

In addition, with a fragile government, decimated infrastructure and infamously corrupt Haitian National Police, a key concern for decision makers in the United States and across the international community is whether or not Haiti—which elected a new president in March 2011—will become a failed state.



"If these issues are not managed strategically, the result could be an influx of refugees to the shores of the U.S., neighboring Caribbean countries and other Western nations which could wreak widespread economic havoc," said Carter.

The breadth and scope of supporting this disaster has enabled NGA to amass valuable lessons learned that analysts can apply to GEOINT tradecraft, policies and practices, said Carter. "The Haiti experience has been a pivotal episode that helped define where we (as an agency) needed to go."

As a result of ongoing after-action reporting and inter-agency data sharing, best practices have emerged that have helped define capability gaps, according to Carter. These lessons learned and other observations informed NGA's vision and subsequently its strategic initiatives.

"The identification of those capability gaps helped to define GEOINT users' needs," said Carter.

"The Haiti CAT became very adept at laying down the fundamentals for mission planning and execution in a crisis situation," said Carter. "We had good concepts, and now we are looking to leverage those concepts into new and better ways of doing business."

For instance, dealing with the Haitian crisis highlighted the need to make information accessible when communicating with non-Intelligence Community mission partners. The CAT made a concerted effort to keep the maximum amount of GEOINT content at the unclassified level and therefore quickly releasable and accessible via the NGA website, giving GEOINT users access to what they needed, where they needed it and when they needed it.

Getting the information onto unclassified networks and to users quickly is crucial to disaster support. In Haiti NGA created electronic map books using handheld devices, said Carter. "NGA immediately began producing and posting commercial imagery and pushing it out via apps," said Carter. "There were unprecedented amounts of intelligence reports created and pushed out on the low-side (unclassified network) about Haiti, a precursor to the capabilities being delivered in support of the online, on-demand goal of the NGA vision."